

Chapter 5 — Themes

As part of a NHA feasibility study, it is useful to develop themes which explain the national significance of a region and tell the unique stories of the place. Input on Delta NHA themes was solicited from local stakeholders via interviews and interactive public workshops. Proposed themes represent a synthesis of ideas from the public process. These were developed to be broad enough to incorporate a diversity of ideas, yet succinct enough to tell a unique story of the Delta's heritage.

Background on the Delta

The Delta lies in the heart of California and has been a vibrant center of diverse habitats, communities, industries, innovations, and infrastructure; of distinctive significance locally, regionally, statewide, nationally, and internationally. The unique resources of the Delta have attracted persons from throughout the world to shape and utilize the landscape.

During the last 10,000 years, a rapid rise in sea level following the last ice age inundated the alluvial valley of the Sacramento River forming the landscape now known as the Delta. The confluence of the Sacramento and San Joaquin Rivers formed a system of freshwater and brackish marshes and from there spread a variety of habitat types: grasslands, seasonal oak woodlands, oak woodland-savannah, chaparral, and riparian, which were incredibly rich with wildlife. Native American groups inhabited the Delta; including the Wintun, Maidu and Miwok, but most died of introduced diseases prior to European settlers. Early explorers visited the Delta in the 18th and 19th centuries, and fur traders such as Jedediah Smith trekked into the region due to the abundance of wildlife such as otter, mink, and beaver.

The Gold Rush era (1848-1855) is recognized as the time when the Delta was 'discovered'. Persons traveling its waters from San Francisco to the goldfields of the Sierra Nevada Mountains began to recognize the fertility of the Delta's soils and the high potential for agricultural production. Reclamation began during the 1800's and the extensive system of marshland was converted to a predominantly agricultural landscape, which the Delta remains today.

The following five themes detail the unique stories of the Delta, incorporating a broad spectrum of topics, historical and contemporary, centered around the nationally-significant aspects of the Delta's natural and cultural heritage.

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Theme 1

At the heart of California lies America's inland delta.

The vast size, unique shape, and geographical location of the Delta have contributed to its importance as an ecological and cultural landscape. It is a rare inland/inverse Delta, the confluence of five rivers, and the largest estuary on the West Coast of the Americas. It provides important habitat for hundreds of plant and animal species, is a key Pacific Flyway stopover location, and an important corridor for anadromous fish. Native Americans built villages and trading posts along the banks of its waterways prior to European settlement. The waterways of the Delta have been used for recreational purposes dating back to the Gold Rush era. Many influential artists have called the Delta home due to its slower pace of life and close proximity to California population centers. While suburban sprawl has threatened the Delta landscape, legislation such as the Delta Protection Act has helped preserve the Delta's rural character.

The sheer size and distinctive shape of the Delta are landscape features which are unmatched anywhere in the world. The Bay-Delta region is the largest estuary on the West Coast of the Americas and the second largest estuary in the United States, next to the Chesapeake Bay. The Delta's flat landscape covers about 1,000 mi² and is the only inland Delta in the United States, often referred to as an 'inverse Delta' as the enclosed bay is at the mouth and the deltaic formation spreads inland. The Delta serves as the confluence of five rivers: Sacramento, San Joaquin, Mokelumne, Cosumnes, and Calaveras, and has a vast watershed covering about 40 percent of California's land area. The large size of the Delta and its key geographical location make it an important ecological home, and an essential corridor for a vast diversity of flora and fauna. It is a key stopover location along the Pacific Flyway for a wide variety of bird species. It is also an important corridor

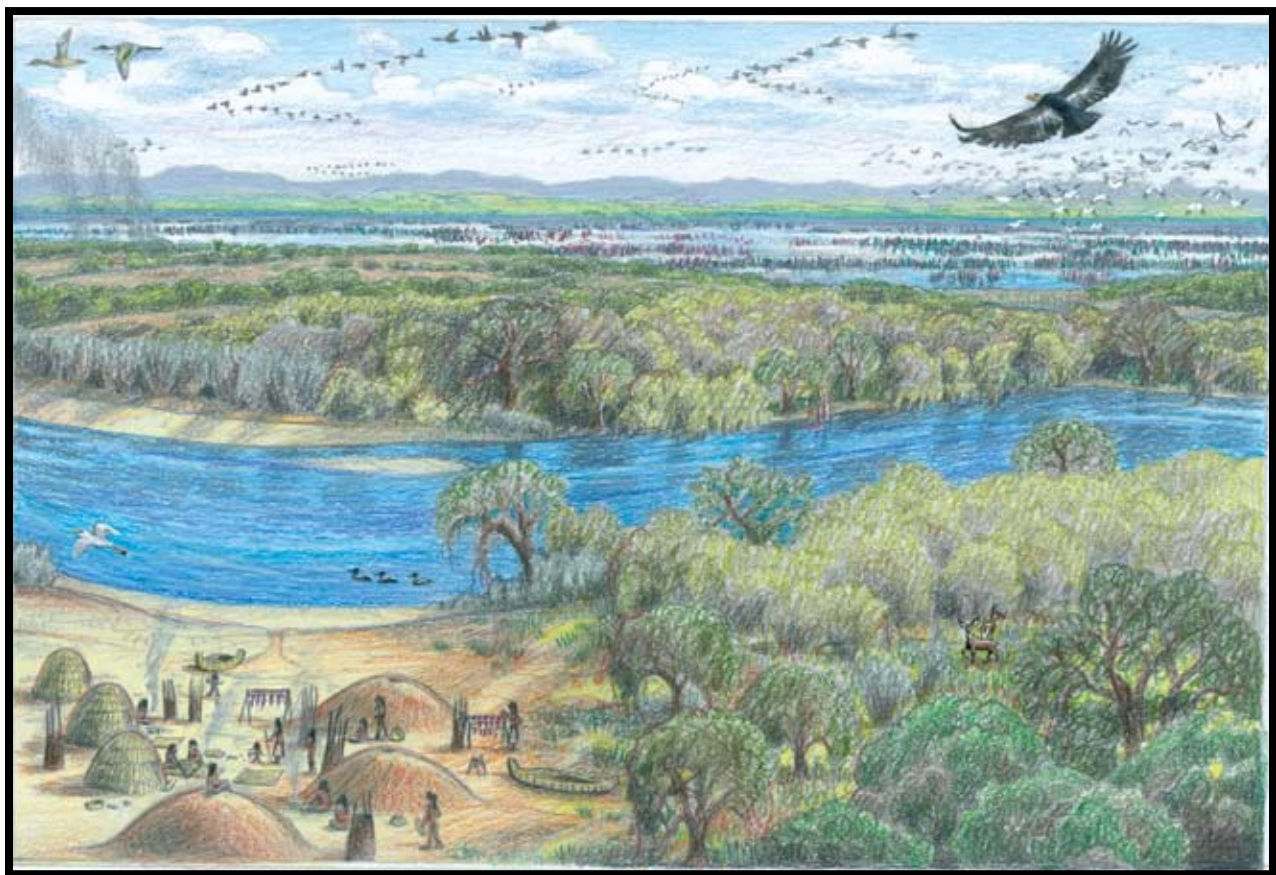


1873 Map Illustrating the large size of the Delta's watershed.¹

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for anadromous fish, such as Chinook Salmon and Steelhead, who transfer large quantities of ocean nutrients into inland ecosystems. The rivers have supported the second largest salmon run on the West Coast (excluding Alaska) and the site of the first Pacific Coast Salmon Cannery is in West Sacramento.

Many Native American tribes built villages and trading posts along the banks of the resource rich Delta rivers. There are remnants of historic Miwok villages in the heart of the Delta; however, most of the Native Americans in the region died of introduced diseases long before European settlement.



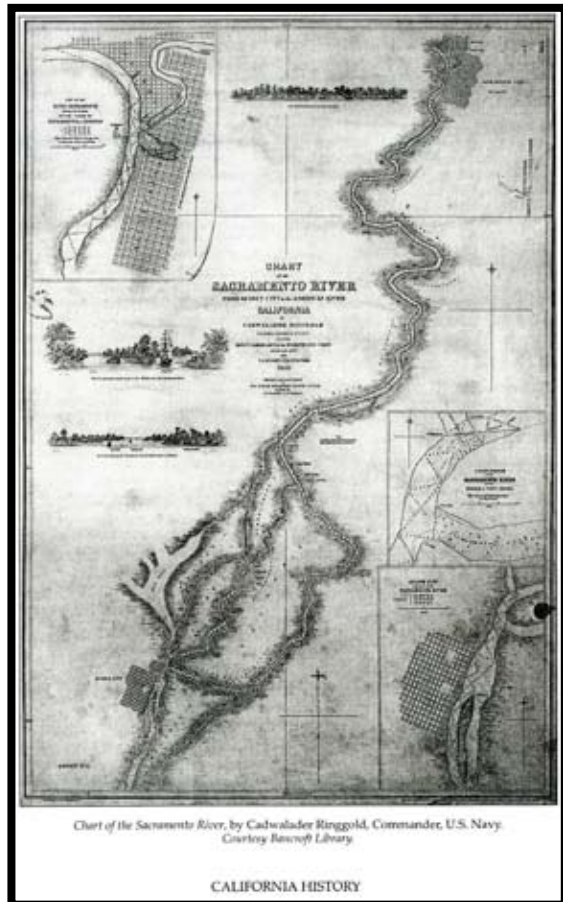
Early Spring scene along the Sacramento River in a pre-Reclamation Delta.

From Bay Nature (www.baynature.org). Original artwork by Laura Cunningham².

The Delta was heavily used as a corridor during the Gold Rush era (1848-1855) due to its prime location between the San Francisco Bay and the Sierra Nevadas, and thousands of forty-niners traveled its rivers on some of the finest steamboats in America. After the Gold Rush era, steamboats continued to travel the waters regularly for recreational purposes and the Delta today remains a prime location for outdoor recreation. Its 1,100+ miles of unique waterways provide opportunities

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for boating, wakeboarding, windsurfing, fishing, birdwatching, and more, to persons who want a leisurely retreat from urban centers that lie adjacent to it (the San Francisco Bay Area, Sacramento, and Stockton), as well as to Delta locals. Additionally, many notable artists such as Wayne Thiebaud and Gregory Kondos have called the Delta home.



'Chart of the Sacramento River' used for Gold Rush Navigation, by Cadwalader Ringgold³



Promotional Material, circa 1911⁴

Due to the Delta's location between major Northern California population centers, its flat and open terrain, and its resources such as water and natural gas; it has served as an important conduit for infrastructure which is necessary for Bay Area, Sacramento Region, and Central Valley communities. Hundreds of miles of infrastructure corridors transverse the Delta including power transmission lines, gas pipelines, aqueducts, state highways, railroads, and deep water ship channels.

However, due to the Delta's close proximity to large urban centers, suburban sprawl has been a major threat for quite some time. In the early 1990s it was identified that the valuable resources of the Delta including agricultural land, habitat, potable water, and recreational waterways were being threatened by urban development stemming from peripheral areas. To help put a halt to this problem, the Delta Protection Act of 1992 delineated a Primary and a Secondary Zone of the Delta which consist of approximately 500,000 acres and 238,000 acres, respectively. The Primary Zone is the area in which urban development is extremely limited, and includes waterways, levees, and farmed lands, extending over portions of five counties: Solano, Yolo, Sacramento, San Joaquin and Contra Costa. The Delta Protection Act is a unique approach to large scale protection of a valuable multi-resource landscape.

Theme 2

Conversion of the Delta from marshland to farmland was one of the largest reclamation projects in the United States.

The significant undertaking of reclaiming the Delta from a tule marsh to an agricultural landscape was one of the largest scale reclamation projects in the United States. Innovative equipment was developed for Delta reclamation and used throughout the world for a variety of purposes.

Many travelers who passed through the Delta during the Gold Rush era became aware of the region's fertile peat soils which had been developed from thousands of years of tule decay. Delta islands' had high potential for agricultural production, but in order for farming to be possible, significant changes needed to be made to the landscape. In 1850, the Swamp and Overflow Land Act conveyed ownership of all swamp and overflow lands from the federal government to the State of California. Shortly thereafter most of California's marshes were privately owned, which included almost all of the land in the Delta. The Legislature formed a Swamp Land Commission and authorized the establishment of reclamation districts.

During the reclamation era, many of the large oak trees were cut down and tule marshes disappeared as the soil was cultivated for farming. The first stage of reclamation was done primarily by Chinese laborers who built levees from the island's peat soils via wheelbarrow brigades. No larger mass of human labor was working by hand on any single project in the world, except the Suez Canal. However, it was obvious at these early stages that peat soils were not adequate levee material, and the material shrank when it dried up, which resulted in cracks being formed or levees washing away completely.

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In the 1870's the sidedraft clamshell dredge was developed specifically for building levees in the Delta and surrounding areas. These steam powered dredges collected soil from alluvial channels and won out over competing machines as they were quicker than other types and generally cheaper to manufacture. This led to entrepreneurs in California introducing the world to an entirely new system of dredging. Between 85 and 90 clamshell dredges have been built for levee construction in the central part of California and continue to be used for repair and maintenance of Delta levees. Additionally, equipment developed for Delta reclamation has been used throughout the world for a wide variety of purposes such as assisting with construction of the Panama Canal, deepening the San Francisco Bay and tributaries, dredging coral for outpost construction during World War II in several Pacific Islands, and reclaiming the Tulare Lake Basin.

Reclamation was complete in 1930 at which point the Delta was no longer a system of marshland, but instead the network of waterways and islands which it remains today. 1,100+ miles of levees exist throughout the Delta, enclosing 57 islands which are mainly used for agricultural production.



"Tule Breakers" transforming swamplands into farmland⁵



Sidedraft clamshell dredger constructing levees using alluvial soil.⁶

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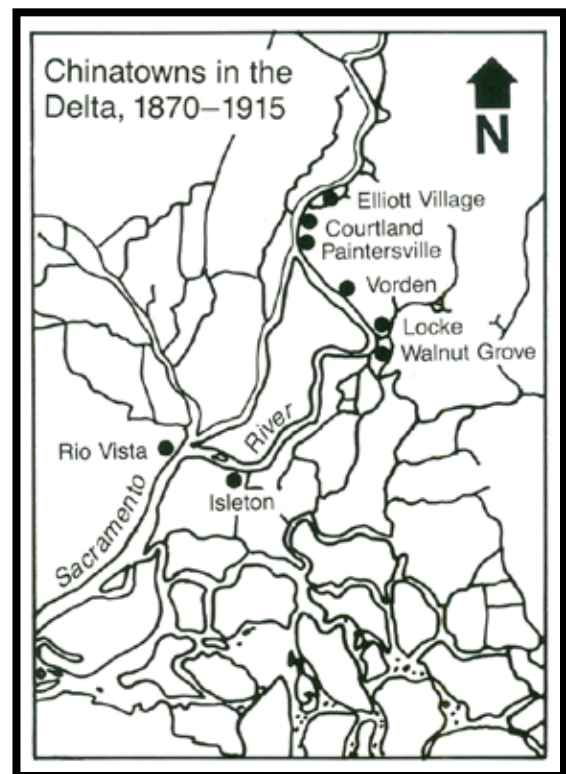
Theme 3

Multi-cultural contributions and experiences have shaped the Delta's rural landscape.

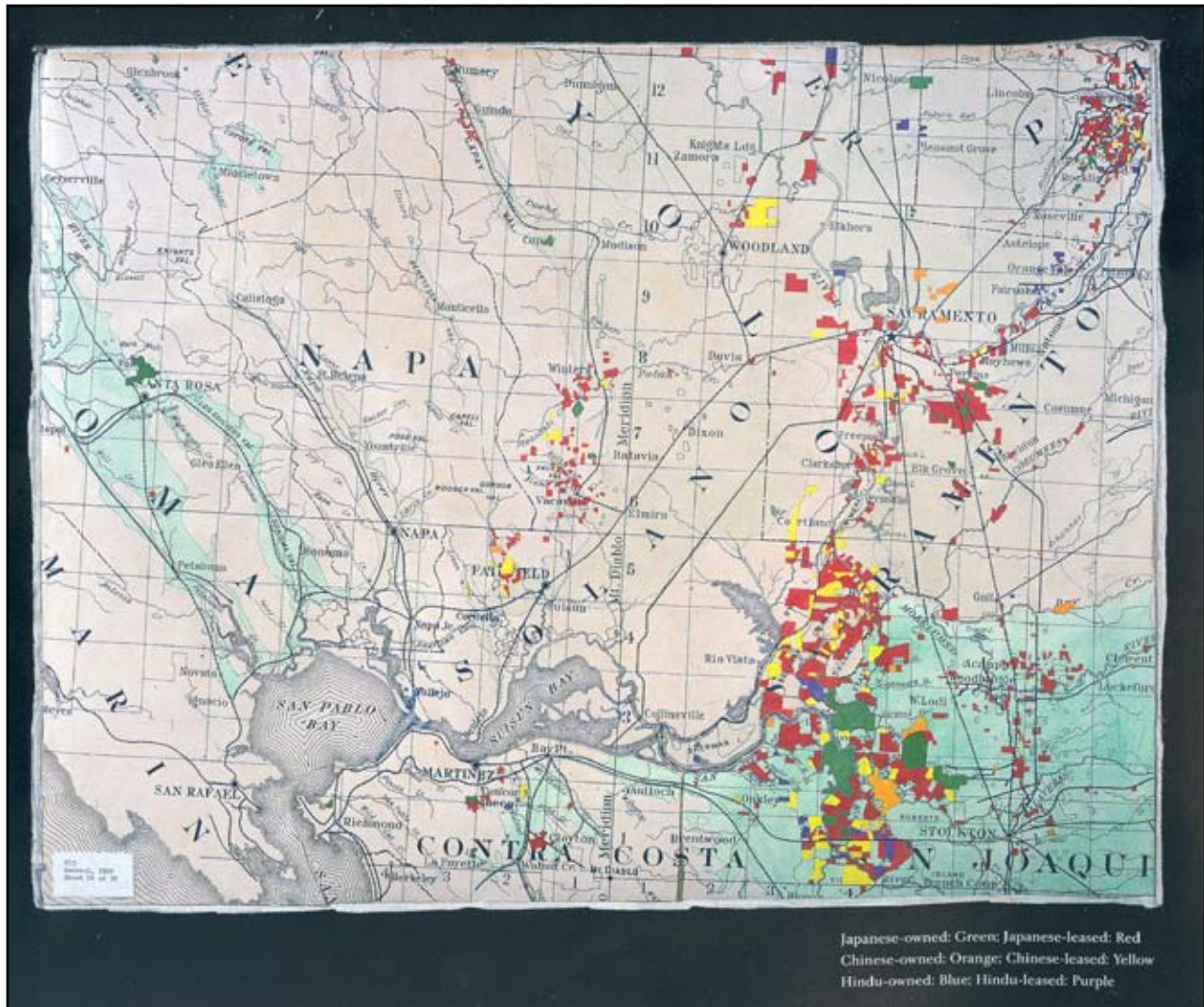
A number of minority groups including Chinese, Japanese, Filipinos, East Indians, Portuguese, and Italians have established communities in the Delta and made significant contributions in shaping the Delta into the agricultural landscape that it is today. A handful of historic communities in the Delta reflect the region's diverse heritage.

People of many different ethnic backgrounds have worked closely together since reclamation to make the Delta one of the most productive agricultural regions in the United States. Several ethnic minority groups have established communities in the Delta including Chinese, Japanese, Filipinos, East Indians, Mexicans, Portuguese, and Italians. The Delta likely had the largest population of Chinese tenant farmers in California, and Chinese-American farmers have maintained a continuous presence for over one and a half centuries in the Delta, though populations have declined in recent years. Around 12,000 Chinese originally came to the area to work on the transcontinental railroad. When that project was completed in 1869, many were put to work building the first set of Delta levees using wheelbarrow brigades, and other tasks including tule removal and plowing. Once the land was farmable, many Chinese remained as tenant farmers and also provided essential labor in the Delta canneries.

A number of Chinatowns were developed along the Sacramento River from 1870-1915, some of which still remain in existence today as historic districts. The town of Locke is the only town which was built and inhabited exclusively by and for Chinese in the United States, and became a symbol of the Chinese contribution to the nation and the importance of Chinese to California's agriculture. Locke is a National Historic Landmark and a National Register Site. Walnut Grove and Isleton also have historic Chinese districts on the National Register, and Isleton



Chinatowns in the Delta, 1870-1915⁷



‘Oriental Land Occupation’ Map of 1920 shows large clusters of parcels in the Delta which were owned or leased by Asian immigrants.⁸

has an annual Asian celebration to honor the town’s diverse heritage. The towns of Courtland and Rio Vista also contain historic Chinese architecture.

Japanese immigrants began arriving to California in the 1890s and a large number came to the Delta. Contributions to Delta agriculture from Japanese-Americans included high quality control standards and successful practices which led towards large-scale agriculture. Their aggressive and hardworking attitudes often helped them to purchase land and make significant progress economically which resulted in a widespread anti-Japanese attitude. Due to the concern that Japanese were dominating some of the ‘very best lands in California’, the map of ‘Oriental Land Occupation’ was produced

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which brought attention to the large amount of land in Northern California with particularly high concentration in the Delta that was owned or leased by Asian-Americans. This map was used to gain support for a 1920 state law that forbid even the leasing of land by Japanese, which led to other states enacting similar laws, and a 1924 federal law banning Japanese immigration. The legacy of Japanese immigrants in the Delta can be found in the towns of Walnut Grove and Isleton which contain historic Japanese districts, both of which are National Register sites.

A handful of other immigrant groups have made significant contributions to the Delta. Portuguese immigrants reclaimed the areas around Clarksburg and Freeport, creating the Lisbon Reclamation District and manufacturing the first clamshell dredger. Italian settlers are widely known for fishing and farming ventures, and their impact on trade and commerce. Filipino immigrants also played a significant part in Delta agricultural labor and established strong communities.

Theme 4

The Delta, California's cornucopia, is amongst the most fertile agricultural regions in the world.

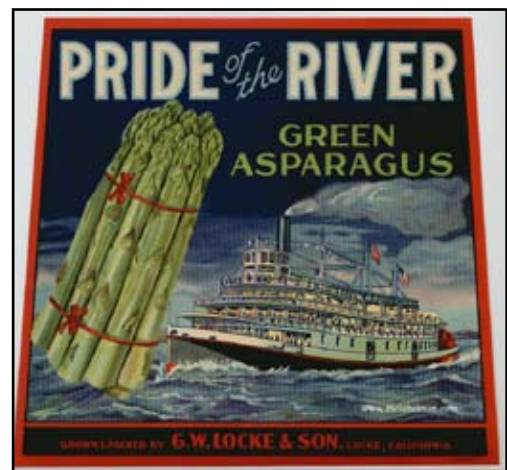
Delta soils are highly productive and support vast diversities and quantities of crops which have contributed billions of dollars to the California economy. A number of specialty crops have been grown in the Delta and exported throughout the world, and the Delta has also been a leading center for development of innovative farm equipment. Current agritourism initiatives are being developed to showcase the Delta's agricultural economy, and wildlife friendly farming practices are demonstrating how Delta farmland and habitat can coexist.

Due to the high fertility of the Delta's peat soils, the high water table, and an available water supply, the Delta has been an extremely productive agricultural region since reclamation. Water is pumped directly from Delta channels for irrigation, and 'trademark' Delta crops have included Bartlett pears, asparagus, sugar beets and Irish potatoes. A large number of other specialty crops have been grown in the Delta including peaches, plums, cherries, tomatoes, onions, peas, celery, spinach, melons, wine grapes, olives, blueberries, and more. Various seeds and grains have also been produced in the Delta including beans, wheat, sunflower seeds, and safflower. Crops from the Delta have been shipped throughout the nation, as well as other parts of the world for quite some time. The Bartlett Pear market was at its peak around World War I, at which point almost 50 percent of all Bartletts were produced in California, mainly in the Delta. Some of the Delta's pear trees are over 100 years old, making it one of the oldest pear growing region in California. Until 1930, the Delta was known as

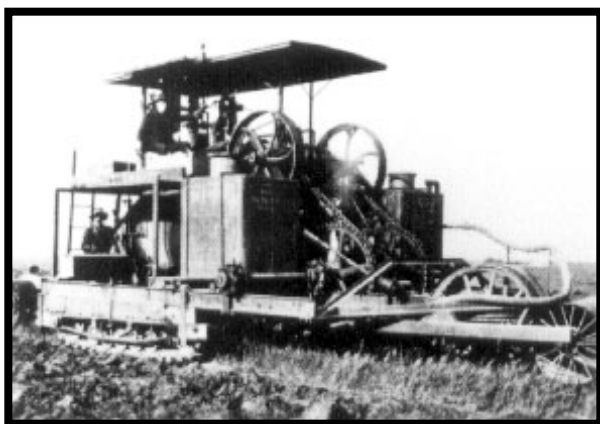
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the asparagus capital of the world, growing 90 percent of the world's supply, for shipment throughout the United States as well as Africa, Europe and Asia. During and after World War II, the Delta produced some of the nation's highest tomato yields per acre. From the beginning, crops were produced for export with waterways serving as early 'highways' to transport goods to Sacramento for the mining communities and San Francisco for shipment overseas. Later, railroads and trucking were utilized to transport crops. Large corporations such as Del Monte, National Cannery, Sun Garden, Heinz Pickle, Libby McNeil, Patt Low and Golden State established canneries in the Delta.

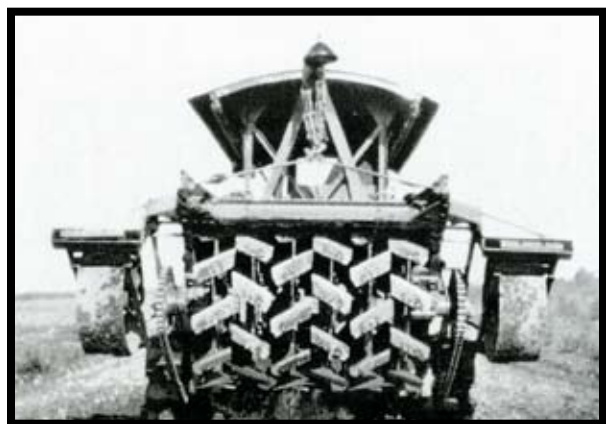
Due to the high agricultural productivity of the Delta, it was an innovative region of equipment invention which revolutionized American farming. Benjamin Holt of Stockton invented several pieces of agricultural equipment, most notably the Caterpillar tractor which had tracks instead of wheels to alleviate the problem of tractor wheels getting stuck in the peaty Delta soils. This design was used throughout the world, for a variety of purposes, such as developing machines that helped end



Produce labels, 1910s- 1930s. ⁹



The original Caterpillar, 1906.¹⁰



Asparagus Plow.¹¹

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World War I, tumble the Berlin Wall, build the Hoover Dam, tunnel under the English Channel and help construct cities across the United States. Other notable equipment was invented in the Delta including a sugar beet harvester, the first bean harvester, the asparagus ripper, the asparagus plow, and a number of other plows, discs, backhoes, cultivators, and subsoilers. Many of these inventions were used throughout the U.S.

Agriculture remains the dominant land use in the Delta today, and land use tools are utilized by Delta counties to preserve the agricultural landscape. Recent agritourism initiatives have helped to further enhance the economic value of Delta agriculture and to educate the surrounding urban populations about its importance. Activities in the Delta such as seasonal flooding and working landscapes projects, have ensured that farmland can also support wildlife habitat.

Theme 5

The Delta lies at the center of California’s water resource challenges.

About two-thirds of California’s residents and over seven million acres of the State’s farmland rely on the Delta watershed as a source of potable water. Two major water projects, the Central Valley Project and the State Water Project, transfer water from the Delta to Southern California. The Delta relies on the availability of sufficient water flows and water quality for the vitality of the ecosystem, recreation, and production agriculture.

Water transferred from the Delta plays a crucial role in sustaining the State of California, the world’s ninth largest economy. Two-thirds of California’s precipitation falls in the northern part of the state, while Southern California is home to two-thirds of the state’s population. As groundwater and surface water supplies were not sufficient to irrigate the San Joaquin Valley and Tulare Basin; state, federal and local governments engaged in efforts, over the course of decades, to develop a plan to take water from wetter parts of Northern California to the drier part of the state in Southern California. In 1933, during the depths of the Great Depression, the federal government authorized the Central Valley Project (CVP). This led to pumping from the Delta through the Delta Mendota Canal and diversions from the San Joaquin River, which began in 1951. The CVP is the largest, and probably most controversial, water purveyor in California. Implementation of the project led to a significant loss in freshwater wetlands in the Central Valley, as more land was converted to agriculture. Dams and reservoirs were constructed for the project which blocked salmon and steelhead from reaching their native spawning grounds. It altered the timing and flow of California’s major river systems, which

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along with pumping, has had further consequences for anadromous fish, and other native fish species, leading to their decline.

However, the 7 million acre-feet of water from the CVP did not end up being enough for the agricultural needs, as well as the increasing number of municipal and industrial users. Therefore the SWP was developed which also created an integrated system of dams and canals. Most of this project's water was pumped from the southern Delta into the California Aqueduct to supply water for some San Joaquin Valley farms, as well as Southern California Municipalities. Construction began in the late 1950's, with major funding approved in a 1960 bond measure. The bond measure was the largest in the nation's history (authorizing the sale of \$1.75 billion in general obligation bonds), and was voter approved in 1960 by the narrowest election in the state's history. Pumps were installed at Clifton Court in the Southern Delta in 1960 and water flowed through the California Aqueduct to the south. The SWP remains the world's largest publicly built and operated water and power development and conveyance system.



CVP's Delta-Mendota Canal (left), and SWP's California Aqueduct (right) adjacent to Interstate 5 in the San Joaquin Valley.¹²

An additional proposal surrounding Delta water supply was the peripheral canal in the early 1980's, which was opposed by voters on a ballot initiative in 1982. This canal would have more directly linked the northern and southern units of the CVP and SWP, but would dramatically alter Delta flows.

Water diversions of the CVP and SWP have had significant environmental impacts. River flows and water quality have declined and native Delta fish species have plummeted to record lows at times. Federal attention has been given towards declining fish species, which resulted in legal actions to restrict water export from southern pumps. A consensus based program, called the CALFED Bay-Delta Program, was initiated in 1994 to bring opposing parties together, but ended up collapsing for a variety of reasons. Governor Arnold Schwarzenegger's Delta Vision process concluded in 2008 with a suite of strategic recommendations intended to manage the Delta as a sustainable ecosystem that would continue to support environmental and economic functions that are critical to the people

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of California. The Delta Reform Act of 2009 laid out a path for Delta governance to meet the co-equal goals of water supply reliability and ecosystem restoration. This included establishing the Delta Stewardship Council to develop the Delta Plan, a comprehensive plan for Delta management, scheduled to be completed in 2012. The legislation also created the Delta Conservancy to carry out land acquisition and ecosystem restoration projects, and included several mandates for the DPC.

In summary, issues surrounding water resource management in the Delta have been a central focus of policy makers in California for decades, making it perhaps one of the most complex resource challenges in the United States. Mark Twain's quote: "Whiskey is for drinking; water is for fighting over", was supposedly made in California's early days and still holds relevancy as California's water wars continue.

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Image Credits

¹California Irrigation Commission, United States; Congress. “Map of the San Joaquin, Sacramento and Tulare Valleys.” Map. David Rumsey Map Collection. 1873. Cartography Associates. 4 Nov. 2008

<<http://www.davidrumsey.com/detail?id=1-1-1635-180047&name=Map+Of+The+San+Joaquin,+Sacramento+And+Tulare+Valleys>>

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⁴California State Railroad Museum, California State Railroad Museum 2001. 12 Dec 2007

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¹²California Department of Water Resources. “Spillway.” 2008. 9 Sept 2011.